STATE OF VERMONT PUBLIC SERVICE BOARD

Docket No. 5270-LYND-1

Investigation into Least-Cost)
Investments, Energy Efficiency) Hearing at
Conservation and Management of) Montpelier, Vt
Demand for Energy In Re:) June 22, 1992
Lyndonville Electric Department's)
Integrated Resource Plan)

Order entered: 11/30/93

PRESENT: Paul R. Peterson, Esq., Hearing Officer

APPEARANCES: Kenneth C. Mason, Manager for Village of Lyndonville Electric Department

William B. Piper, Esq.
Primmer & Piper, P.C.
for Vermont Public Power
Supply Authority

John L. Hodge, Esq. for Department of Public Service

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I. INTRODUCTION

A. Summary

The Village of Lyndonville Electric Department ("LED" or "Lyndonville") requested hearings on its integrated resource plan ("IRP") on April 2, 1993. Lyndonville is the second member of the Vermont Public Power Supply Authority ("VPPSA") to have its IRP reviewed by the Public Service Board ("Board"). After reviewing Lyndonville's IRP and considering the testimony and exhibits presented by Lyndonville, VPPSA, and the Department of Public Service ("DPS"), I recommend that the Board approve Lyndonville's IRP, subject to certain minor conditions and modifications described below.

Based on the evidence before me, I conclude that Lyndonville's IRP is a least-cost plan for providing electric service to its customers within the meaning of the Board's Orders of 4/16/90 in Docket No. 5270 and 3/13/91 in Docket No. 5270 Phase V, 30 V.S.A. §218c, and the DPS's Twenty-Year Electric Plan. The parties to this Docket conducted extensive negotiations over the details of Lyndonville's IRP; to a large extent, the parties were in agreement with the final IRP Lyndonville filed on June 15, 1993. Additional agreements were reached during the course of the hearings. Remaining areas of disagreement are resolved below.

As recommended to the Board, Lyndonville's IRP will implement comprehensive energy efficiency programs¹ for all customer classes by January 1, 1994. Over the next seven years, those programs are estimated to save Lyndonville's ratepayers \$1,553,994 at a cost to LED of \$368,257 (net present value, 1991 dollars).² Energy savings, over the life of the program measures, are estimated at over 14,717,000 KWH, with peak energy savings of 297 KW.

^{1.} I use the phrases "energy efficiency" and "demand-side management" ("DSM") synonymously and interchangeably throughout this and other IRP dockets.

^{2.} On a societal basis, which includes customer costs and adjustments for risk and environmental externalities, the programs are estimated to save \$1,631,696 at a cost to society of \$1,063,900 (NPV, 1991 dollars).

Prior to the filing of its next IRP on June 1, 1995, Lyndonville will complete a study of its transmission and distribution system, improve its analytical methods for estimating future loads, revise its assumptions and methods for calculating avoided costs, and file plans for monitoring and evaluating its current DSM programs.

Six other VPPSA-member municipal utilities have draft IRPs similar to Lyndonville's filed with the Board. I am hopeful that each of them will soon begin providing least-cost energy services to their customers, with or without formal Board approval of their IRPs.

B. Background

On June 17, 1991, Lyndonville filed the first draft of its integrated resource plan, pursuant to the Board's Orders of 4/16/90 in Docket No. 5270 and 3/13/91 in Docket No. 5270 Phase V.³ On October 18, 1991, the DPS and VPPSA filed a stipulation that detailed a schedule and process for filing revised IRPs for VPPSA member utilities (including Lyndonville). The Board approved the stipulation and directed VPPSA member utilities to file complete IRPs no later than the week of May 4, 1992. Docket No. 5270-HDPK-1, et al, Order of 2/20/92.

On May 8, 1992, VPPSA, on behalf of Lyndonville, filed revisions to the previous draft IRP. On June 8, 1992, a workshop and prehearing conference was held to determine a schedule for Board review of Lyndonville's and other VPPSA members' revised IRPs. The Board designated Paul R. Peterson, Esq. as Hearing Officer.

The VPPSA member utilities and the DPS agreed to begin a detailed review of the Lyndonville and Village of Ludlow Electric Department ("Ludlow") IRPs first, and then to review the IRPs of the other VPPSA member utilities.

Docket No. 5270-HDPK, et al, Order of 6/26/92. Ludlow and the DPS filed a stipulation that resolved most issues related to Ludlow's IRP on August 11,

^{3.} Docket 5270 Phase V was opened at the request of Vermont's smaller utilities, who asserted that they could develop IRPs more rapidly and effectively if they were not "burdened" by the need to participate in Docket 5270 Phases I-IV. Docket No. 5270 Phase V, Order of 3/13/91 at 3.

1992. After a technical hearing on October 2, 1992, the Hearing Officer circulated a Proposal for Decision. The Board adopted the Proposal for Decision on December 3, 1992. Docket No. 5270-LDLW-1, Order of 12/3/92.

On March 31, 1993, Lyndonville filed revisions to its IRP. On April 2, 1993, Lyndonville requested technical hearings on its IRP. A prehearing conference was held on April 29, 1993, before Hearing Officer Paul R. Peterson, Esq., at which time the parties agreed to a schedule for discovery, prefiled testimony, and a technical hearing.

On June 15, 1993, Lyndonville filed further modifications to its IRP.

On June 22, 1993, a technical hearing was held at which Lyndonville, VPPSA, and the DPS presented evidence and cross- examined witnesses. Lyndonville chose to be represented by Kenneth C. Mason, general manager of the Village of Lyndonville Electric Department. VPPSA was represented by William B. Piper, Esq., of Primer & Piper, P.C. The DPS was represented by John L. Hodge, Esq.

On June 25, 1993, VPPSA filed a revised copy of Exh. VPPSA-5, pursuant to an agreement reached during the technical hearing. Tr. 6/22/93 at 200-202. On July 23, 1993, the DPS filed a revised Attachment B of the DPS's position paper ("DPS PP").4

On August 6, 1993, the DPS filed a draft Proposal for Decision that included additional comments on Lyndonville's IRP. On August 9, 1993, VPPSA filed its comments. Lyndonville did not file any comments.

Based on the parties' testimony, exhibits, comments, and other evidence in this Docket, the Hearing Officer hereby reports the following findings and conclusions to the Board in accordance with 30 V.S.A. §8.

II. FINDINGS OF FACT

^{4.} I hereby take official notice of VPPSA's revised exhibit VPPSA-5 and the DPS's revised position paper, Attachment B, pursuant to 3 V.S.A. §810(4). Any party who objects to the inclusion of the above documents into the official record of this case shall notify the Board and state the reasons for the objection within 10 days of the date of this Proposal for Decision.

A. Load Forecast

- 1. In 1990, Lyndonville provided 60,089 MWH of electricity to its customers, serving a peak demand of 11.78 MW. In the year 2000, Lyndonville estimates that it will need to provide 76,852 MWH of electricity, and meet a peak demand of 13.64 MW. Exh. VPPSA-1 at 1.1.1 and 1.1.3.
- 2. The DPS agrees that Lyndonville's load forecasts, as developed by VPPSA, are reasonable for the purposes of this IRP. DPS Position Paper ("PP") at 1-2; tr. 6/22/93 at 32-33.
- 3. The DPS recommends that in the future Lyndonville analyze a range of potential demand scenarios and explore alternate forecasting approaches, such as end-use models, in order to develop an IRP that is robust for a variety of possible future demand configurations. Lyndonville does not disagree with the DPS's recommendations. DPS PP at 2-3; tr. 6/22/93 at 26.

B. Supply-Side Resources

4. Lyndonville and the DPS agree that within one year of this Order or upon program evaluation and redesign, whichever occurs first, Lyndonville will incorporate eleven changes for determining the avoided costs to be used for the final design of its energy efficiency programs. Lyndonville and the DPS agree that the changes will be immediately incorporated in the field screening of energy efficiency measures. DPS PP at 3-4; 6 Underhill pf. at 17.

^{5.} VPPSA's load forecasts were done prior to the closure of one of Lyndonville's largest industrial customers, Northeast Tool, which accounted for approximately 10 percent of Lyndonville's annual MWH sales and 10 percent of Lyndonville's daily MW demand. Annual Report of Village of Lyndonville for Year Ending 1992. Despite the closure of Northeast Tool, I conclude that Lyndonville's load projections are reasonable estimates of future demand for the purpose of developing this IRP. Findings 1 and 2.

^{6.} Those eleven changes are:

⁽¹⁾ LED will incorporate the new VELCO tariff;

⁽²⁾ LED will remove the fuel escalation from the O & M escalators;

⁽³⁾ LED will reflect CR impacts of DSM without delay when the load is growing;

- 5. Lyndonville's supply-side portfolio of resources is not optimal. Currently, Lyndonville is heavily committed to baseload resources and lacks any peaking resources. DPS PP at 4 and Att. A.
- 6. The sale of baseload resources would produce a more balanced mix and could lower overall power costs, depending upon the terms of the sale. DPS PP at 5; tr. 6/22/93 at 60-62, 81-82, 270-272.
- 7. VPPSA states that under today's market conditions there are no cost-effective opportunities to sell Lyndonville's excess baseload resources. Tr. at 41-43.
- 8. The DPS maintains that planning involves a realistic assessment of current and future market conditions and that VPPSA should optimize Lyndonville's supply-side resources for IRP purposes based on such assessments. Tr. at 109, 116-117, 270-272.
- 9. VPPSA used an assumed sale of Stonybrook capacity for the purpose of determining Lyndonville's capacity costs. VPPSA misstates those costs because Stonybrook capacity includes significant amounts of capitalized energy charges and, therefore, does not represent the true value of peaking capacity. DPS PP at 6; tr. at 102-104.
- 10. Lyndonville's avoided costs, as developed by VPPSA, underestimate avoided energy costs and overestimate avoided capacity costs.

 DPS PP at 7; tr. at 109.

⁽⁴⁾ LED agrees to separate dispatches for combined cycle dispatches on different fuels;

⁽⁵⁾ LED will use year of purchase pricing for generic plant acquisitions;

⁽⁶⁾ LED will assume NYPA purchases after 2001;

⁽⁷⁾ LED will evaluate DSM programs (for program level screening) with (a) the DSM program with the lowest benefit cost ratio in the last position, and (b) the DSM program with the lowest net societal benefit in the last position;

⁽⁸⁾ LED will rely on economic criteria to determine appropriate supply acquisitions;

⁽⁹⁾ LED will use updated cost escalators;

⁽¹⁰⁾ LED will compare the costs of combined cycle generation to the costs of gas turbine generation for acquisition decisions; and

⁽¹¹⁾ LED will assume the availability of gas turbine plants after 2000.

- 11. VPPSA states that revisions to its avoided cost calculations, as suggested by the DPS, will not significantly affect the cost-effectiveness screening for Lyndonville's energy efficiency programs. Tr. at 71-72.
- 12. The DPS has not proposed an alternate avoided cost figure for Lyndonville. No party has identified any energy efficiency programs that would be materially affected by the DPS's suggested revisions to VPPSA's methodology for calculating avoided costs, with the exception of Lyndonville's draft Small Commercial program. Tr. at 71, 260-261.

C. Transmission and Distribution

- 13. Lyndonville agrees to incorporate revisions to its proposed transmission and distribution (T&D) study as specified in attachment B of the DPS's position paper. Lyndonville also agrees to joint review by Lyndonville and DPS of the interim and final study results. Tr. at 148-149, 171-172.
- 14. With the incorporation of the DPS's revisions and the revisions to Mr. Mason's prefiled testimony, Lyndonville's proposed T&D study is adequate for the purposes of this IRP. Tr. at 163-165.

D. Demand-Side Resources

- 15. Over a seven-year implementation period, Lyndonville anticipates spending \$368,257 on its demand-side energy efficiency programs to acquire \$1,553,994 of benefits for its electrical system, resulting in a utility benefit cost ratio of 4.22 (NPV, 1991 dollars). Exh. VPPSA-4.
- 16. Lyndonville expects total energy savings from its DSM programs over seven years to exceed 14,717,000 KWH, with peak energy savings of 297 KW. $\underline{\text{Id}}$.
- 17. From a societal perspective, Lyndonville estimates that its DSM programs will save \$1,631,696, at a cost of \$1,063,900, for a societal benefit cost ratio of 1.53 (NPV, 191 dollars). <u>Id</u>.
- 18. Lyndonville is in the process of implementing or plans to implement the following DSM programs in an effort to provide comprehensive energy efficiency services to its customers:

Residential High-Use Residential Moderate-Use Residential New Construction Farm Small Commercial & Industrial Large Commercial & Industrial C&I New Construction C&I Equipment Replacement Municipal Facilities Street & Area Lighting

Exh. VPPSA-1 at 3.1.2; DPS PP at 15.

- 19. Lyndonville and the DPS have reached agreement on certain general principles and specific changes regarding Lyndonville's DSM programs.

 DPS PP at 8; Underhill pf. at 17; tr. at 199-202; rev. exh. VPPSA-5.
- 20. The DPS recommends that the Board require further changes and additions to Lyndonville's DSM program designs before approving its IRP. DPS PP at 11-12, 14-15, 17, 19.
- 21. The DPS maintains that Lyndonville has not filed an adequate program description for acquiring energy efficiency resources from its small C&I customers and that the Board should not approve Lyndonville's IRP without such a program description. DPS PP at 18-19; tr. at 237-239, 255-256.

E. Monitoring and Evaluation

22. Lyndonville will develop program specific monitoring and evaluation plans that will include impact and process evaluations where appropriate. Lyndonville will develop these plans in consultation with the DPS. Exhs. VPPSA-1 at 3.11, VPPSA-5 at #21.

III. DISCUSSION

A. Load Forecast

Lyndonville has presented estimates of future load growth, both demand growth (KW) and system sales (KWH), through the year 2010. Lyndonville used standard regression models for each customer class in developing Lyndonville's forecast. Overall, the growth forecast predicts that Lyndonville's electric system will grow more slowly than it has in the past, a projection that is consistent with recent growth trends in northeastern Vermont. Exh. VPPSA-1 at 1.1.1 - 1.1.4.

The DPS states that Lyndonville's growth estimates are reasonable for the purposes of this IRP. In the future, the DPS recommends that Lyndonville analyze a range of potential demand scenarios and consider end-use models in order to develop an IRP that anticipates a variety of possible

demand configurations. Neither Lyndonville nor VPPSA disagreed with the DPS's recommendations. Finding 3.

Load forecasts incorporate numerous assumptions regarding population growth, economic development, and technology changes that influence end-use consumption. For IRP purposes, a utility should estimate future loads under a variety of assumptions that describe a range or bandwidth of possible future electricity needs. Once the boundaries of reasonably likely future loads are determined, the utility should then examine resource alternatives for meeting that range of potential future demands. The mix of resources, both supply and demand, that create the greatest flexibility for meeting future needs are then incorporated into the IRP.

I conclude that Lyndonville's load forecasts are acceptable for the purposes of this IRP. Although Lyndonville did not describe a range of possible future demands, it did make some general assumptions regarding future growth in an effort to reflect recent economic trends. The recent loss of one industrial customer, representing ten percent of Lyndonville's peak load and annual KWH sales, demonstrates the particular sensitivity of small electric systems to load changes that cannot be anticipated regardless of the models used to develop load forecasts. Thus, for future IRPs, I recommend that the Board require Lyndonville to consider load forecasting techniques along the lines recommended by the DPS; i.e., the consideration of various scenarios, as well as mere trend-line variations.

B. Supply-Side Resources

Lyndonville and the DPS have agreed on numerous changes to the inputs and methods by which avoided costs are calculated. Finding 4. The parties have not been able to resolve two issues regarding the methodology for setting avoided costs. Each issue is discussed below. The DPS recommends that Lyndonville's IRP not be approved until revisions are made to its avoided costs. DPS PP at 7.

1. Optimizing Lyndonville's supply resources

Lyndonville and the DPS agree that Lyndonville's current portfolio of supply resources is unbalanced due to its heavy reliance on baseload resources and absence of peaking resources. The parties also agree that

Lyndonville should optimize its portfolio (i.e., improve the balance of baseload, intermediate, and peaking resources), if cost-effective sales of existing resources can be made. Tr. at 48-49, 56-57, 69; finding 6.

VPPSA states that opportunities for cost-effective sales to optimize Lyndonville's supply resources do not exist in today's power markets. VPPSA, on behalf of Lyndonville, is an active player in current power markets and is constantly seeking opportunities for cost-effective sales for Lyndonville and other VPPSA system members. Gallagher pf. at 3-4; tr. at 41-43, 62-64.

The DPS states that it is not convinced that there are no costeffective opportunities for sales of Lyndonville supply resources in today's
power markets. Moreover, the DPS contends that <u>current</u> short-term sales
opportunities are not the critical issue for developing long-term avoided
costs. The DPS maintains that a utility must use sound professional judgment
and accurate information to develop realistic expectations about current <u>and</u>
future opportunities for optimizing a utility's resource portfolio. Tr. at
83-85, 269-270.

The DPS maintains that Lyndonville's IRP fails to incorporate realistic optimization opportunities. Specifically, Lyndonville should optimize its supply mix based on an anticipated All Requirements Contract (ARC) with VPPSA, or alternatively, assume that some cost-effective sales of baseload resources will be made before the end of this decade. Under either option, Lyndonville's portfolio of supply resources would be better balanced. Tr. at 84-86, 271-272.

In essence, the disagreement between VPPSA and the DPS focuses on the current and future possibilities of cost-effective sales of Lyndonville's supply resources. VPPSA maintains that no such opportunities exist today, and

^{7.} Both the DPS and VPPSA witnesses referred to an ARC proposal that they anticipated would be filed in the fall of 1993. DPS PP at 5-6; tr. at 66-67, 271-272. In general terms, VPPSA would act as a central dispatcher and, therefore, have an opportunity to share each member system's supply resources with other VPPSA members whenever those resources were available and the sharing was cost-effective.

that they are unlikely to occur over the next few years. The DPS is uncertain whether those opportunities exist today and maintains that it is reasonable to assume that they will occur over the next several years. I conclude that for the purpose of <u>planning</u>, that Lyndonville should anticipate more opportunities to make cost-effective short and long-term sales over the next decade. Although the future is always uncertain, I am persuaded that it is reasonable to assume that over the IRP planning horizon that such opportunities will be available to optimize Lyndonville's resources.

However, for reasons discussed more fully below, I recommend that the Board approve Lyndonville's IRP without requiring VPPSA to optimize Lyndonville's supply resources at this time. I further recommend that the Board require Lyndonville to incorporate reasonable estimates of future costeffective sales, consistent with the recommendations of the DPS, when Lyndonville files its next IRP on June 1, 1995.

2. Methodology for calculating avoided cost

Lyndonville's capacity costs, for the purpose of its IRP, are based on an assumed sale of Lyndonville's Stonybrook supply resource.

Lyndonville asserts that Stonybrook is the marginal capacity unit that

Lyndonville could avoid if its capacity needs were reduced. Exh. VPPSA-1 at

2.3.4-2.3.5.

The DPS asserts that Stonybrook capacity costs include significant amounts of capitalized energy charges (<u>i.e.</u>, Lyndonville has not accounted for the fact that Stonybrook capacity provides energy benefits). Because of that, Lyndonville's avoided costs underestimate avoided energy costs and overestimate avoided capacity costs, according to the DPS. DPS PP at 6-7; tr. at 102-104, 109. Neither Lyndonville nor VPPSA disputed the DPS's characterization of Stonybrook's capacity costs.

I conclude that Lyndonville's calculations of avoided costs do underestimate avoided energy costs and overestimate avoided capacity costs.

Nonetheless, I recommend that the Board approve Lyndonville's IRP, despite its imprecise avoided costs. I do so for the reasons that follow.

First, the DPS has not proposed alternative avoided cost figures that Lyndonville should use. Tr. at 71. The DPS's testimony is that one component of Lyndonville's avoided costs should be higher and that another component of its avoided costs should be lower. It is possible that Lyndonville's total avoided costs are "accurate" even if the methodology used by VPPSA was incorrect. Tr. at 297-298.

Second, and most importantly, VPPSA and the DPS both testified that the DSM programs that Lyndonville selected after screening are unlikely to change based on any reasonable expectations of adjustments to Lyndonville's avoided costs. Tr. at 71, 260-261.

Third, the process of developing IRPs involves numerous assumptions regarding future load requirements, new supply options, the sale of existing supply resources, the effectiveness of DSM measures, and the impact of new technologies. IRPs, by their nature, are flexible documents that require frequent adjustments and updates. Lyndonville now seeks Board approval of its IRP prior to beginning implementation of its energy efficiency programs. Mason pf. at 15; tr. at 310-311. Those programs are expected to provide significant benefits to many of Lyndonville's customers in the form of lower monthly energy consumption and benefits to all of Lyndonville's ratepayers through the avoidance of costly purchased power and new generating resources.

I recommend that the Board approve Lyndonville's IRP as an adequate first attempt, fully aware of the potential for further improvements, in order to facilitate the prompt implementation of energy efficiency programs for the benefit of Lyndonville's customers and ratepayers. I further

^{8.} I do not mean to imply that the DPS should be developing its own estimates of a utility's avoided costs. I am merely noting that the evidentiary record in this Docket does not contain different estimates of Lyndonville's avoided costs.

^{9.} Lyndonville filed its first IRP in June, 1991, made substantial revisions to that plan throughout 1992, and recently incorporated further refinements based on several months of negotiations with the DPS.

recommend that the Board direct Lyndonville to file updated avoided cost figures, using the methodology described by the DPS, when Lyndonville files its next IRP on June 1, 1995.

C. Transmission and Distribution

1. T&D regarding Lyndonville's IRP

Lyndonville's IRP includes a proposed study of its transmission and distribution (T&D) system to identify cost-effective improvements. Lyndonville maintains that such studies are valuable components of least-cost planning, a position that Lyndonville has advocated since the beginning of the Board's investigation into total resource planning. Exh. VPPSA-1 at 3.9.1-3.9.3; Mason pf. at 8-9.

Lyndonville and the DPS have agreed to several modifications to Lyndonville's original T&D study proposal. Based on those adjustments, the DPS supports Lyndonville's proposed study of its T&D system and recommends that the Board conclude that the T&D section of Lyndonville's IRP is reasonable for the purposes of this IRP. Tr. at 163-166, 171-172.

T&D efficiency improvements are an essential component of all IRPs.¹⁰ An appropriate first step in acquiring T&D efficiencies is a study of the utility's existing T&D system. Joint review of the study results by the utility and the DPS improves the likelihood that the utility's decisions regarding T&D investments will be appropriate and cost-effective. Findings 13, 14. I conclude that the agreements reached by Lyndonville and the DPS regarding Lyndonville's proposed T&D study, as specified in the hearing record, are appropriate and reasonable. I recommend that the Board approve the T&D section of Lyndonville's IRP.

2. Reconductering CVPS's 34.5 Kv line

In 1991, Lyndonville received a study from Vermont Electric Power Company, Inc. (VELCO) regarding the feasibility of a direct hook-up between VELCO and Lyndonville that would replace an existing Lyndonville connection

^{10. &}lt;u>See</u>, Docket No. 5270, Order of 4/16/90, Vol. II at 66-68; 30 V.S.A. §218c(a)(1); Docket No. 5270-BED-2, Order of 11/12/92 at 28-29, 34-35.

with Central Vermont Public Service Corporation (CVPS). Although the study found that a direct VELCO to Lyndonville connection was not justified based on overall benefits to the Vermont "single-system", Lyndonville asserts that the benefits that would accrue to the Lyndonville electric system would provide substantial benefits to Lyndonville's ratepayers. 11 Id. at 3.9.20.

In connection with this assertion, Lyndonville has requested information from the DPS regarding CVPS's analysis of this particular issue and the DPS's evaluation of CVPS's analysis. The DPS stated that it agreed with CVPS's analysis. The DPS also stated that it was willing to provide copies of all non-proprietary supporting documentation to Lyndonville. Mason pf. at 14; tr. at 292. As of August 6, 1993, Lyndonville had not received any further information from the DPS. VPPSA comments, 8/9/93 at 2.

I recommend that the Board direct the DPS to provide Lyndonville with all non-proprietary information regarding CVPS's economic analysis of the reconductering of its 34.5 Kv transmission feed to Lyndonville, and the DPS's evaluation of that analysis, within ten days of a final Order in this Docket.

D. Demand-Side Resources

Lyndonville's IRP includes energy efficiency programs for its residential, commercial, industrial, and municipal customers. Lyndonville maintains that its programs will acquire customer demand-side resources in a comprehensive and societally cost-effective manner. Findings 16, 17, 18.

The DPS is in general agreement with the design elements of most of Lyndonville's energy efficiency programs. Lyndonville has agreed to several DPS recommendations regarding Lyndonville's programs as specified in a draft stipulation dated April 23, 1993. DPS PP at 8; Underhill pf. at 17; rev. exh. VPPSA-5.

^{11.} Lyndonville states that the benefits include the elimination of transmission charges to CVPS (\$140,00 per year), the elimination of CVPS's line losses (\$25,000 per year), and the reduction of Capability/Responsibility charges (\$40,000 per year).

For some other programs, the DPS recommends specific changes that Lyndonville has not agreed to implement. Each of those disagreements is discussed below.

1. Large C&I Retrofit Program

Lyndonville proposes to negotiate with each of its twenty-one large C&I customers regarding customer incentives for specific, cost-effective measures identified through a site-specific audit. Lyndonville maintains that individual negotiations are appropriate so that it can tailor incentives to each customer's situation and, therefore, acquire customer resources with a minimum expenditure of utility money. In addition, Lyndonville asserts that negotiated incentives would allow Lyndonville to avoid committing large amounts of money to single, large customers who might abandon efficiency measures or relocate before Lyndonville could receive the full benefits from the efficiency measures. Underhill pf. at 4-6.

The DPS states that negotiated incentives may lead to lower participation rates, equity concerns among customers, unnecessary transaction costs (<u>i.e.</u>, negotiation expenditures), and ultimately, less cost-effective acquisition of energy efficiency resources. The DPS notes that Lyndonville's interim Large C&I retrofit program has not demonstrated that negotiated incentives are an effective approach. DPS PP at 26; tr. at 249-250.

Despite its concerns over the cost-effectiveness of negotiated incentives, the DPS will support negotiated incentives for Lyndonville's Large C&I program provided that each customer receives an incentive equal to no more than a three-year payback. The DPS references the Board's Order of 2/26/93 in Docket No. 5270-CUC-2 where a similar incentive structure was approved for Citizens Utilities Company ("CUC"). The DPS agrees that a separate negotiation process for Lyndon State College ("LCS") is appropriate given that LCS may qualify for state energy efficiency grants. The DPS agrees to work with Lyndonville, LCS, and state officials to develop an appropriate process for acquiring cost-effective energy efficiency resources.

My review of the parties' positions and Lyndonville's interim large C&I program has persuaded me that negotiated incentives, within limits that create a one-to-three year customer payback, are an appropriate design element for Lyndonville's large C&I program at this time. The issues raised by Lyndonville and the DPS are similar to those raised in Docket No. 5270-CUC-2. I share the DPS's concerns that negotiating incentives with each customer may result in a less cost-effective program. However, I recommend that the Board allow Lyndonville an opportunity to demonstrate the success of its approach, within the limits of a one-to-three year payback. I further recommend that the Board make an exception for Lyndon State College, given its unique ability to qualify for state funds that have already been allocated by the Legislature¹², and allow Lyndonville to negotiate incentives without the one-to-three year payback requirement.

2. Farm Program incentives

Lyndonville will provide on-site audits of dairy farms to identify cost-effective energy efficiency opportunities. To encourage farm customers to install cost-effective measures, Lyndonville plans to offer a financial incentive that will buy down the cost of the measures to create an eighteenmonth payback for the customer. Lyndonville intends to limit its financial contribution for any one farm to a maximum of 42 months of estimated savings. The effect of this limitation is that measures with simple paybacks of more than 60 months (5 years) will have longer than eighteen-month (1.5 year) paybacks for the farm customer. Exh. VPPSA-1 at 3.4.5; Underhill pf. at 7.

Lyndonville states that this incentive cap will limit the amount of money that it invests on any particular farm, and that this is appropriate due to the risk that a farm may go out of business. In addition, Lyndonville

^{12.} In 1992, the Legislature authorized \$160,000 specifically for energy efficiency improvements at Vermont State College facilities. Public Acts, 1992 Session, No. 256 \$10(a)(3). In 1993, the Legislature authorized \$500,000 for energy efficiency improvements at Vermont State College facilities. Public Acts, 1993 Session, No. 59 \$10(a)(1)(C).

maintains that without the cap it may have to commit large sums of its money to farm customers for measures with long paybacks, which would reduce the amount of funds available for its other energy efficiency programs. Underhill pf. at 7; Mason pf. at 5-6.

The DPS states that Lyndonville's incentive cap will compromise the comprehensiveness of measures installed by farm customers and limit Lyndonville's ability to acquire all cost-effective energy efficiency resources from these customers. The DPS maintains that Lyndonville's incentive cap is inconsistent with the legislative intent of 30 V.S.A. §218b¹³ and the Board'sOrder of 2/26/93 in Docket No. 5270-CUC-2. DPS PP at 14.

Neither Lyndonville nor the DPS could specify the rate of farm failures in Vermont. Lyndonville did not know whether the rate of farm failures was greater or less than the rate of failure of other small commercial enterprises. Tr. at 208-209, 234-235. I conclude that without specific testimony or evidence on farm failure rates that it is not appropriate to discriminate against this customer group through an incentive cap. In support of this conclusion, I note that 30 V.S.A. §218b applies specifically to farm energy efficiency programs; to me, this suggests that the Legislature was singling out farm customers as a group that utilities should make particular efforts to assist through their DSM programs.

30 V.S.A. §218b states:

effective delivery mechanisms.

services, utility financial constraints, and cost-

Each Vermont electric distribution utility shall develop and implement comprehensive energy efficiency programs for its dairy farm customers. Such programs shall include all program measures that the public service board determines will be cost-effective as part of the utility's least cost integrated plan. Utilities shall file such proposed program by August 1, 1991. The board shall require each utility to deliver approved program measures to farm customers as rapidly as possible thereafter; taking into consideration the need for these

^{14.} See, Docket No. 5270-CUC-2, Order of 2/26/93 at 105-106.

In regard to Lyndonville's concerns over large investments for individual farm customers, it may be appropriate to limit financial incentives and require the customer to pay for a larger percentage of the investment. In Docket No. 5270-CUC-2 referenced above, CUC proposed providing no financial incentive for farm program measures with paybacks over ten years. The Board concluded that such an approach was likely to limit the comprehensiveness of measures installed and, therefore, the ability of CUC to acquire all cost-effective energy efficiency resources. Id. at 60-62, 105-106. Lyndonville's proposal would have the effect of reducing (but not eliminating) the incentive it would pay for measures with paybacks greater than five years. In previous Orders approving utility energy efficiency programs, the Board has approved a variety of utility incentive structures that require greater or lesser customer financial contributions. 15

I conclude that Lyndonville's proposed incentive cap may be an appropriate way to allocate the costs of measures without significantly impairing program comprehensiveness or implementation rates and, thus, result in the acquisition of all cost-effective efficiency resources. I recommend that Lyndonville monitor the effectiveness of this program in achieving the installation of a comprehensive package of cost-effective measures that maximize the energy efficiency savings.

I am concerned that the five-year payback cap may be too limited. Lyndonville testified that there are measures with eight-year to ten-year payback periods, but not many measures with paybacks over ten years. The plain language of 30 V.S.A. §218b persuades me that the legislative intent of \$218b was to assist farmers through utility energy efficiency planning and programs. I conclude that an eight-year payback cap is more appropriate than Lyndonville's proposed five-year cap. I recommend that the Board approve

^{15.} The most extreme example may be residential fuel-switching programs. The Board has approved utility programs that provide for 100 percent customer financing (CVPS, GMP), 100 percent utility financing with customers repaying a portion of the cost based upon a percentage of their savings (BED, WEC), and a \$500 direct grant (Ludlow).

Lyndonville's incentive cap approach for its farm program, with a modified incentive cap that includes an eighteen-month buydown of measures with up to an eight-year payback.

As part of its evaluation process, Lyndonville should closely monitor this program to determine what measures customers are installing and not installing and the extent to which Lyndonville's incentive levels are affecting those installation decisions. I recommend that the Board require Lyndonville to include a report on the results of its monitoring efforts with its 1994 Annual DSM Report, due in March, 1995.

3. Lost Opportunity Programs

 $\label{thm:loss_potential} \mbox{Lyndonville proposes to address potential lost opportunity issues}$ in the following manner.

For residential and commercial new construction, Lyndonville will seek to acquire energy efficiency resources through involvement in Act 250 proceedings. For new construction projects not covered by Act 250, which are mostly residential projects, Lyndonville suggests three alternatives: (1) enforce a yet-to-be-implemented statewide building code through local planning and zoning regulations; or (2) implement a program similar to the assessment fee program that is being developed by Washington Electric Cooperative, Inc. (WEC) and the DPS; or, (3) develop a program design, through discussion with the DPS, for the cost-effective acquisition of resources from these customers. Underhill pf. at 10-11.

For C&I equipment replacement, Lyndonville is involved with discussions with GMP and CVPS regarding their equipment replacement programs. Lyndonville anticipates reaching an agreement with either GMP or CVPS for the joint delivery of an equipment replacement program for the eight VPPSA-member municipal utilities in the near future. If an agreement is not reached with GMP or CVPS, Lyndonville plans to implement a program similar to GMP's and

^{16.} Act 250 permits are required for many, but not all, residential and most commercial construction projects. To receive a permit, projects must demonstrate that they satisfy certain energy efficiency criteria, as well as other environmental and economic criteria. See, 10 V.S.A. §6001.

CVPS's, but would not benefit from the advertising and trade ally relationships of those larger utilities. <u>Id</u>. at 9; tr. at 209-211.

The DPS agrees, in large part, with Lyndonville's approaches for acquiring potential lost opportunities. The DPS would like to see Lyndonville commit to specific timeframes for filing proposed designs for non-Act 250 new construction and C&I equipment replacement programs. DPS PP at 15-17; tr. at 254-255.

I conclude that Lyndonville's preliminary plans for acquiring potential lost opportunity resources are reasonable. My review of other Vermont utility DSM and IRP filings indicates that new construction programs have been particularly difficult to design in a cost-effective manner. 17 Lyndonville's plan to utilize the Act 250 process is a creative approach and is consistent with the general thrust of recent Board Orders in other energy efficiency dockets. 18 I recommend that the Board approve Lyndonville's proposals as appropriate for this stage of the IRP review. I further recommend that the Board require Lyndonville to file a program design for non-Act 250 construction projects by January 1, 1994. That program design should specifically reference the proposal developed through the WEC and DPS joint investigation that is currently due to be completed in November, 1993. I recommend that the Board require Lyndonville to file a status report on its negotiations with GMP and CVPS within thirty days of this Order, along with a complete C&I equipment replacement program description, and to begin implementation of the program on or before January 1, 1994.

4. Small C&I Program

Lyndonville has filed a description of anticipated costs and benefits of a Small C&I program, but has not filed a detailed program

^{17. &}lt;u>See</u>, Docket Nos. 5270-GMP-3, 5270-VGS-2, 5270-WEC-2, 5270-CUC-2, and 5270-CV-1&3.

^{18. &}lt;u>See</u>, Docket Nos. 5270, Order of 4/16/90, Vol.III at 157; 5270-VGS-2, Order of 10/23/92 at 73-75, 83-84, 90-91; 5270-CUC-2, Order of 2/26/93 at 94-96, 115; 5270-CV-1&3, Order of 5/4/93 at 64-69, 98-101, 118.

description. Lyndonville is in the process of refining the design of its program and is reviewing proposals from independent contractors to implement a Small C&I program. At the hearing, Lyndonville stated that it intended to provide an outline of its program to the DPS by August 1, 1993, and to begin implementation of the program by September 1, 1993. Exh. VPPSA-1 at 3.5.1-3.5.2; Underhill pf. at 8-9; tr. at 212-213.

The DPS maintains that the Board should not approve Lyndonville's IRP until a detailed and complete Small C&I program description is filed. The DPS points out that Lyndonville's Small C&I program is intended to be a model program upon which other VPPSA utilities will develop their own Small C&I programs. As of August 6, 1993, the DPS has not received a program description that the DPS believes will be effective. 19 DPS PP at 17-19; tr. at 216, 255-256; DPS comments, 8/6/93 at 17-18.

A program to acquire cost-effective resources from Small C&I customers should be an important component of every utility's IRP. Small C&I customers represent a relatively large number of customers, even if the anticipated resources available from each customer may be relatively small.²⁰ In approving Ludlow's IRP, which did not contain a Small C&I program, the Board relied upon statements that another VPPSA member utility would be developing a Small C&I program that could be quickly adapted to Ludlow. See, Docket No. 5270-LDLW-2, Order of 12/3/92 at 10-11, 19.

^{19.} The DPS acknowledges that Lyndonville provided a revised program description after the close of hearings in June; however, the DPS is not persuaded that the revised program description is adequate. DPS comments, 8/6/93 at 17.

^{20.} Small C&I customers are often candidates for cost-effective lighting retrofits and hot water efficiency improvements, neither of which represent large energy saving opportunities on an individual customer basis. However, there may be some site specific energy uses that can present significant efficiency opportunities. In addition, the large number of small stores and businesses with potential cost-effective lighting retrofits argues for a strong utility effort to acquire these resources.

I recommend that the Board require Lyndonville to file a detailed and complete Small C&I program description within thirty days of this Order and to begin implementation of the program by January 1, 1994. Lyndonville's small C&I customers should have an opportunity to participate in a program that has the potential to reduce their current monthly electric consumption; Lyndonville Electric Department should begin acquiring cost-effective resources from this customer group in a prompt and efficient manner.

E. Monitoring and Evaluation

In previous Orders, the Board has concluded that monitoring and evaluation studies are an essential part of a utilities obligation to develop and implement cost-effective energy efficiency programs. Ideally, detailed monitoring and evaluation plans should be in place <u>before</u> program implementation begins. ²¹ Lyndonville has committed to developing appropriate M&E plans in consultation with the DPS. The two parties anticipate identifying particular aspects of Lyndonville's DSM programs that require, and are amenable to, detailed study. Rev. exh. VPPSA-5, #21.

I recommend that the Board require Lyndonville to file the details of its monitoring and evaluation plans by June 1, 1994.

IV. OTHER ISSUES

A. Prefiled Testimony

Prior to the technical hearing on June 22, 1993, VPPSA filed a motion to reject the DPS's filing of June 2, 1993, because that filing did not meet the Board's criteria for prefiled testimony. VPPSA alleges that the DPS filing of a position paper fails to meet the requirements of Board Rule 2.213(C) ["prefiled testimony shall be in question and answer form"] and Board Rule 2.216(B) ["exhibits shall be summarized and explained in testimony" (emphasis in LED motion)]. VPPSA requests that the Board reject the DPS's

^{21. &}lt;u>See</u>, Docket Nos. 5270-GMP-3, Order of 9/5/91 at 56-58; 5270-CV-3, Order of 5/20/91 at 81-82; 5270-BED-1, Order of 10/17/91 at 53-54; 5270-VGS-2, Order of 10/23/92 at 64-65; and 5270-CUC-2, Order of 2/26/93 at 71-74.

filing pursuant to Board Rule 2.208 ["substantially defective or insufficient filings"]. LED motion of 6/8/93.

On June 18, 1993, the DPS filed an objection to VPPSA's motion stating, in essence, that position papers had been accepted in previous IRP dockets and that the crucial "integration" component of IRP justifies a deviation from a technical application of the Board's rules regarding the form of prefiled testimony.

On June 21, 1993, the DPS made additional filings in which each witness for the DPS identified the portion(s) of the position paper that they had developed and which they planned to sponsor at the technical hearing. The DPS also filed a revised position paper that contained numbered lines.

At the technical hearing, VPPSA renewed its motion stating that its fundamental concern was that it be able to correlate specific testimony to a specific witness and then be able to cross-examine that witness. Tr. at 10-12.

At the technical hearing, I denied VPPSA's motion. I concluded that the DPS had substantially identified which witnesses were sponsoring specific portions of its position paper and that the DPS's failure to conform to the Board's Rules, in this instance, was harmless error under Board Rule 2.22. I advised the parties that they could make additional arguments after the hearings had concluded, and I specifically invited them to identify any substantive harm that might have occurred. Tr. at 17-19.

In its comments filed on August 9, 1993, VPPSA reiterated its concerns regarding the difficulty of preparing cross-examination without certainty as to which witness is sponsoring the prefiled position statements. 22

^{22.} VPPSA states that one of the DPS's witnesses at the hearing appeared to be sponsoring the <u>entire</u> position paper while that witness's prefiled testimony indicated that he would be sponsoring only a small part of the position paper. My reading of that witness's prefiled testimony and the transcript indicates that the witness was clear that he intended to sponsor the entire position paper, due to the fact that it was prepared under his supervision. VPPSA comments, 8/9/93.

I reaffirm my conclusion that no substantial harm occurred, despite the problems that VPPSA has identified. I want to emphasize, for future hearings, that all parties should be as explicit as possible as to the specific witnesses that will be sponsoring specific testimony. In a case where filings will be sponsored by more than one witness, it is the obligation of the party making the filing to clearly indicate the witness(es) who will be available for cross-examination. I specifically decline to recommend any exceptions to the Board's Rules for IRP dockets; I find that the Board's Rules are appropriately flexible to accommodate any special circumstances related to "integrated" resource planning.

B. Effect of IRP Approval on the Interim DSM Programs

As part of the stipulation of 10/18/91 between VPPSA-member utilities and the DPS, the DPS agreed to review the results of audits conducted by Lyndonville for its interim Large C&I and interim Farm programs. The DPS has requested that it no longer be required to perform that review process. Lyndonville states that it does not object to discontinuing the DPS's review. Tr. at 306-308.

I recommend that the Board grant the parties' request, effective upon the date of an Order in this Docket approving Lyndonville's IRP.

C. Annual DSM Reports

In order to monitor the implementation results and cost-effectiveness of utility energy efficiency programs, the Board has required utilities to file annual DSM reports. In the fall of 1992, the Board approved a standard report format developed by several utilities, the DPS, and the Conservation Law Foundation ("CLF"). On March 1, 1993, CVPS, GMP, WEC, CUC, and BED all filed their first annual DSM reports using the Board's approved format. On July 27, 1993, the Board held an informal workshop to discuss

^{23.} The participating utilities were CVPS, GMP, CUC, and WEC. See, Order of 12/3/92 in Docket Nos. 5270-GMP-3, 5270-CV-3, 5270-CUC-2, and 5270-WEC-2.

improvements to the annual reporting format. A summary of the results of that workshop were sent to all workshop participants on July 30, $1993.^{24}$

I recommend that the Board require Lyndonville to file an annual DSM report on March 1 of each year, with its first report due on March 1, 1994. I further recommend that the Board require Lyndonville to use the Board's approved annual DSM report format (with the changes agreed upon in the July, 1993, workshop), or, in the alternative, to file its own proposed annual DSM report format by January 1, 1994.

D. Lyndonville's Next IRP

The Board requires utilities to file an IRP every three years.²⁵
Lyndonville filed the first draft of its IRP on June 17, 1991. Substantial revisions were filed on May 8, 1992. Further revisions were filed on June 15, 1993.

A new IRP filing in June, 1994, may not allow Lyndonville to incorporate changes based on experience gained from the implementation of its energy efficiency programs, some of which are unlikely to begin before January, 1994. A new IRP filing in June, 1996, may result in Lyndonville waiting too long to incorporate changes to its load forecasts and avoided costs based on new developments since 1991.

I recommend that the Board require Lyndonville to file its next IRP on June 1, 1995. By that time, Lyndonville will have had a full year (1994) of DSM program experience, its T&D study will have been completed, and historical (since 1991) and projected economic factors can be integrated into its new plan.

E. Other VPPSA Utilities' IRPs

At the prehearing conference of 6/8/92 in this Docket, the parties agreed to review other VPPSA-member utilities' IRPs after final, complete IRPs

^{24.} VPPSA, on behalf of its member systems, participated in the July workshop.

^{25. &}lt;u>See</u>, Docket No. 5270, Order of 4/16/90, Vol. IV at 51; Docket No. 5270 Phase V, Order of 3/13/91 at 28.

were filed for Ludlow and Lyndonville. Ludlow's IRP was approved by the Board on December 3, 1992. This proposal for decision recommends that the Board approve Lyndonville's IRP, with the modifications discussed above. At this time, I see no obstacles to the prompt review of the remaining VPPSA-member IRPs.

Those VPPSA members without approved IRPs should continue to implement interim programs and begin the implementation of additional programs that appear to be societally cost-effective based on currently filed information. The Board has emphasized the need for utilities to begin the process of acquiring demand-side resources, even without an approved IRP.²⁶

V. CONCLUSION

Based on the evidence before me, I conclude that Lyndonville's IRP, with the modifications recommended above, is a least-cost plan for providing electric service to its customers within the meaning of the Board's Orders of 4/16/90 in Docket No. 5270 and 3/13/91 in Docket No. 5270 Phase V, 30 V.S.A. §218c, and the DPS's Twenty-Year Electric Plan.

This Proposal for Decision has been served on all parties to this proceeding in accordance with 3 $V.s.A.~\S811.$

DATED at Montpelier, Vermont, this 8th day of November, 2009.

s/Paul R. Peterson
Paul R. Peterson, Esq., Hearing Officer

^{26. 30} V.S.A.§218c(c) states:

Nothing in this section shall reduce the existing obligation of a regulated gas or electric company to acquire cost effective supply and demand resources pending proposal and approval of an integrated resource plan.

VI. BOARD DISCUSSION

On November 5, 1993, the DPS filed comments on the Proposal for Decision ("PFD"). Neither Lyndonville nor VPPSA, the other two parties to the Docket, requested any changes be made to the PFD.

The DPS identified one issue that we believe requires further discussion. That issue involves determining the appropriate timeframe for updating Lyndonville's avoided costs.

The DPS requests that Lyndonville be required to <u>immediately</u> incorporate the "peaker plus marginal energy" approach²⁷ for determining avoided costs for the purposes of field screening. The DPS further requests that this same approach be included in Lyndonville's program designs within "one year of this Order, or upon program evaluation and redesign, whichever comes first". DPS comments at 2.

The PFD recommends that Lyndonville be required to file updated avoided costs using the DPS's peaker plus marginal energy approach when Lyndonville files its next IRP in June, 1995. PFD at 16-18.

We agree with the Hearing Officer's comments regarding the need for Lyndonville to provide cost-effective DSM programs to its customers without further delays. VPPSA and the DPS both testified that the programs that Lyndonville proposes to implement were unlikely to change based on the DPS's proposed refinements to the avoided cost methodology used by Lyndonville. Therefore, we decline to accept the DPS's recommendation that Lyndonville immediately recalculate its avoided costs using the DPS's preferred approach.

However, we are concerned that waiting until June 1, 1995, may be too long a time period. We direct Lyndonville to incorporate updated avoided costs, using the peaker plus marginal energy approach, in its field screening and DSM program designs on or before February 1, 1995. In addition,

^{27.} By this, we understand the DPS to mean that avoided costs are differentiated between lowest-cost, or peaker, capacity (that which is needed solely to meet peak demand and reliability) and energy (including that portion of capacity that is purchased to serve energy needs).

IT IS HEREBY ORDERED, ADJUDGED, AND DECREED by the Public Service Board of the State of Vermont that:

- The Findings, conclusions, and recommendations of the Hearing Officer are hereby adopted.
- 2. Lyndonville's IRP is approved, except as modified herein, and is consistent with the Board's Orders in Docket No. 5270, 30 V.S.A. §218c, and the Department of Public Service's Twenty Year Plan.
- 3. The DPS is no longer required to review audit reports of LED's interim DSM programs.
- 4. The DPS shall provide LED with copies of all non-proprietary information related to CVPS's study of its 34.5 Kv line, including the DPS's evaluation of CVPS's study, within ten days of the date of this Order.
 - 5. LED shall modify its DSM programs as follows:
 - (a) negotiate customer incentives in its Large C&I program to achieve a payback of one-to-three years, except for Lyndon State College; and
 - (b) expand the customer incentive cap in its Farm program to include an eighteen-month buydown of all cost-effective measures with simple paybacks of eight years or less.
 - 6. Within thirty days of the date of this Order, LED shall file:
 - (a) a status report on its C&I equipment replacement program, including a complete program description; and
 - (b) a complete program description for its Small C&I program.
 - 7. By January 1, 1994, LED shall:
 - (a) file a program design for non-Act 250 construction projects that references the new construction proposal developed by WEC and the DPS;

^{28.} Lyndonville may need to recalculate its avoided costs due to new power supply contracts, significant changes in its load, or for any number of other reasons. If such a recalculation is done, we direct Lyndonville to incorporate the DPS's recommendations at that time.

- (b) begin implementation of its C&I Equipment Replacement program; and
- (d) begin implementation of its Small C&I program.
- 8. LED shall file an annual DSM report on March first of each year, beginning on March 1, 1994.
- 9. By June 1, 1994, LED shall file the details of its monitoring and evaluation plans.
- 10. By February 1, 1995, or when LED updates its avoided costs, whichever occurs earlier, LED shall utilize the DPS's peaker plus marginal energy approach for determining avoided costs. Once they are determined, the new avoided costs shall be immediately incorporated into LED's field screening and DSM program designs.
- 11. LED shall file its next IRP on June 1, 1995. In addition to any other requirements for an IRP, LED shall:
 - (a) develop load forecasts for a variety of demand scenarios and consider the benefits of end-use models;
 - (b) include reasonable estimates of future sales and purchases of supply-side resources;
 - (c) utilize a marginal avoided cost methodology that accurately represents the value of an avoided supply resource; and
 - (d) include recommendations for improvements to its ${\tt T\&D}$ system as developed in its ${\tt T\&D}$ study.

 $$\operatorname{\textsc{DATED}}$ at Montpelier, Vermont, this 30th day of November, 1993.

s/Richard H. Cowart)			
)	PUBLIC	SERVICE
s/Suzanne D. Rude)		BOARD	
)	OF	VERMONT
s/Leonard U. Wilson)			

OFFICE OF THE CLERK

FILED: November 30, 1993

ATTEST: s/Susan M. Hudson

Clerk of the Board

NOTICE TO READERS: This decision is subject to revision of technical errors. Readers are requested to notify the Clerk of the Board of any technical errors, in order that any necessary corrections may be made.

Appeal of this decision to the Supreme Court of Vermont must be filed with the Clerk of the Board within thirty days. Appeal will not stay the effect of this Order, absent further Order by this Board or appropriate action by the Supreme Court of Vermont. Motions for reconsideration or stay, if any, must be filed with the Clerk of the Board within ten days of the date of this decision and order.